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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,813	10/23/2003	Peter Schramm	2380-996	5428

23117 7590 08/14/2006

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EXAMINER	
KIM, WESLEY LEO	

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 08/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/690,813	SCHRAMM ET AL.	
	Examiner	Art Unit	
	Wesley L. Kim	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/13/06 has been entered.

Response to Amendment

This Office Action is in response to Amendment filed 6/13/06.

- Claims 1 and 19 are currently amended.
- Claims 1-33 are pending in the current Office Action.

Response to Arguments

Applicant's arguments filed 6/13/06 have been fully considered but they are not persuasive.

- Applicant notes that claim 1 and 19 have been amended, at the Examiner's invitation to specify "the measuring and identifying are performed more or less in parallel by different functional units in the mobile station".

  The examiner notes that this is true, however the examiner did not say that the amendment would put the claims into condition for allowance. The examiner was merely attempting to clarify the claim language for the purposes of clarifying what the claimed invention is directed towards.

- Applicant argues that Sporre does not teach that the traffic channels contain any base station identificiation such as a BSIC or related training sequence.

Sporre teaches that BCCH frequency channels contain BSIC codes (Col.11;59-63) which reads on the claim limitations. The claims of the present invention do not specify that traffic channels contain any base station identification. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

- The examiner further incorporates all the of the Response to Arguments in the Final Office Action (mailed 3/14/06) into the current Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 19 recite "measuring and identifying are performed more or less in parallel by different functional units in the mobile station". The phrase "more or less" is vague and indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

To the examiner, "more or less in parallel" could mean 10 seconds after one device processes the information or 1 second later or exactly at the same time, thus

leaving it up to the person to give their own interpretation as to what "more or less in parallel" means.

The examiner notes that he invited the applicant to add "the measuring and identifying are performed more or less in parallel by different functional units in the mobile station" into the claim language, however the examiner at the time overlooked the problem with the phrase "more or less" in the limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-5,7,8,12,15,18-19,31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sporre (U.S. Patent 596657) in view of Khan et al (U.S. Patent 6754509 B1).

Regarding Claims 1 and 19, Sporre teaches A method of performing link quality estimation of a TDMA-based (Col.1;21,TDMA system such as GSM) wireless communication link between a mobile station and a target base station (Col.4;10-14), wherein the mobile station receives a signal burst on a channel frequency of the target base station (Col.4;10-14, BCCH carrier frequencies), wherein by the following steps: measuring by the mobile station a link quality of the received signal burst (Col.4;10-14, signal burst strength), simultaneously identifying the target base station based on the same received signal burst

(Col.4;13-17, the mobile decodes the base station id as a part of the measurement, the measurement of link quality and identification of the base station is done simultaneously), and qualifying the measurement if the mobile station has succeeded to identify the target base station (Col.4;27-29, if the mobile was able to decode the BSIC, the measurement is included in the report), or discarding the measurement if the mobile station, has failed to identify the target base station (Col.4;27-29, if the mobile was unable to decode the BSIC the measurement is definitely not included in the report), however Sporre **is silent on** the measuring and identifying are performed more or less in parallel by different functional units in the mobile station.

To the examiner, it is obvious that the functions of the one processor of Sporre, which can already measure a link quality of the received signal burst and simultaneously identify the target base station based on the same received signal burst (Col.4;13-17, the mobile decodes the base station id as a part of the measurement, the measurement of link quality and identification of the base station is done simultaneously), could be performed more or less in parallel by different functional units (i.e. dual processors) in the mobile station.

Further supporting this position, Khan teaches that it is well known in the art that mobile stations can have dual processors for the purposes of each processor handling different functions (Col.1;48-59, the function for one processor could be to measure the link quality and the other function for the other processor being identification of the target base station).

The examiner notes that the term "simultaneous" and "more or less" could have multiple interpretations depending on who the interpreter is. Simultaneous could mean, almost at the same point but not exactly at the same point (i.e. See Schramm et al, U.S. Pub. 2004/0127163, Par.43) and "more or less in parallel" could mean 10 seconds later or 1 second later or exactly at the same time, leaving it up to the person to give their own interpretation as to what it means.

The Sporre reference clearly teaches that the link quality measurements and base station identification are performed simultaneously according to the examiners interpretation of "simultaneous" (Fig.4 and Col.11, step 3 and step 4) and it is obvious that dual processors are able to perform two functions more or less in parallel.

To one of ordinary skill in the art, it would have been obvious to modify Sporre with Khan at the time of the invention, such that the measuring and identifying are performed more or less in parallel by different functional units in the mobile station, to provide a method where the dual processor can process information at a faster rate than a single processor doing all of the work.

Regarding Claim 2 and 20, Sporre and Khan teach all the limitations as recited in claims 1 and 19, respectively, and Sporre further teaches the mobile station is connected to a serving base station (Col.4;30-32) and the target base station is a neighbouring base station (Col.4;13-17), wherein by the further step of reporting the qualified measurement by the mobile station to the serving base station (Col.4;30-32).

Regarding Claim 3 and 21, Sporre and Khan teach all the limitations as recited in claims 2 and 20, respectively, and Sporre further teaches the mobile station is directed by the serving base station in a measurement order to select a measuring and identifying scheme for performing the steps of measuring and identifying, wherein the scheme is pre-programmed in the mobile station (Col.10;52-Col.11;10, the serving base station sends a BA-list to a mobile station with a bit map representation of a channel twice if traffic channels are to be measured (i.e. a scheme) and only once if BCCH channels are to be measured (i.e. another scheme)).

Regarding Claims 4 and 22, Sporre and Khan teach all the limitations as recited in claims 1 and 19, respectively, wherein the received signal burst is measured with respect to received signal burst strength (RSS) (Col.4;10-13).

Regarding Claims 5 and 23, Sporre and Khan teach all the limitations as recited in claims 1 and 19, respectively, wherein the received signal burst includes an identity of the target base station which is detected by the mobile station (Col.4;13-17).

Regarding Claim 7 and 24, Sporre and Khan teach all the limitations as recited in claims 1 and 19, wherein the received signal burst includes a burst from the target base station including a training sequence (Col.11;43-49, time slot 0, i.e. bits which get the BS and mobile in synchronization), wherein the identifying step includes the substeps of: estimating the training sequence by the mobile station (Col.11;43-49, estimates the training sequence, i.e. time slot 0),

wherein the training sequence is related to an identity of the target base station in a way that is known by the mobile station (Col.11;39, training sequence, i.e. time slot 0 contains the BSIC which is decoded by the mobile station and then related to a target base station), and deriving the target base station identity from the estimated training sequence based on the known relation (Col.11;39, decodes the BSIC in training sequence to determine target base station).

Regarding Claim 8, Sporre and Khan teach all the limitations as recited in claim 7, and Sporre teaches a code of the training sequence (Col.11;61-62, BSIC of list of frequency channels) is identical to the identity of the target base station (Col.4;13-17, BSIC is identical to the identity of target base station).

Regarding Claims 12 and 26, Sporre and Khan teach all the limitations as recited in claims 1 and 19, respectively, and Sporre further teaches the channel estimation is conducted on the received signal burst with respect to the target base station for performing at least one of the measuring and identifying steps (Col.4;10-13).

Regarding Claim 15, Sporre and Khan teach all the limitations as recited in claim 1, and Sporre further teaches the received signal burst includes a complete burst period (Col.11;43-49, eight time slots is a complete burst period).

Regarding Claim 18 and 31, A method according to any of claims 1 and 19, respectively, wherein the qualified measurement is used for at least one of: performing base station selection (Col.8;4-11) for serving the mobile station in idle (Col.11;11-13).

Regarding Claim 32 and 33, Sporre and Khan teach a mobile phone capable of performing all the limitations according to claim 1 (See claim 1 rejection), therefore it is inherent that there exists a computer program product directly loadable or stored in the internal memory of a computer in the mobile station, including software code means for performing the method according to any of claims 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 6, 14, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sporre (U.S. Patent 5966657) and Khan (U.S. Patent 6754509 B1) in view of Applicants Admitted Prior Art (Schramm et al).

Regarding Claim 6, Sporre and Khan teach all the limitations as recited in claim 5, however the combination **does not expressly teach** the received signal burst includes a synchronisation channel burst from the target base station including the identity.

Sporre teaches a mobile station may not be synchronized and in order to synchronize, measures over a time period of at least eight time slots (i.e. synchronization channel burst) to be sure that time slot 0 will occur during the measurement.

Applicants Admitted Prior Art teaches in GSM, the BSIC (i.e. identity) is included in bursts of the logical synchronisation channel (SCH) (Par.10;1-3).

To one of ordinary skill in the art it would have been obvious to modify Sporre and Khan, such that the received signal burst includes a synchronisation channel burst from the target base station including the identity, so that the mobile station may be tuned to the specific channel frequency to measure the link quality.

Regarding Claims 14 and 28, Sporre and Khan teach all the limitations as recited in claims 1 and 19, and Sporre further teaches the target base station is unsynchronised with the mobile station (Col.11;43-45), however the combination **does not expressly disclose** the mobile station receives a burst of a synchronisation channel for obtaining timing information, wherein the identifying step is based on the obtained timing information.

Sporre teaches a mobile station may not be synchronized and in order to synchronize, measures over a time period of at least eight time slots (i.e. synchronization channel burst) to be sure that time slot 0 will occur during the measurement. Based on the timing information (i.e. location of time slot 0 in the eight time slots channel burst) the mobile station determines the identity (Col.11;38-40 and Col.11;45-49)

Applicants Admitted Prior Art teaches in GSM, the BSIC (i.e. identity) is included in bursts of the logical synchronisation channel (SCH) (Par.10;1-3).

To one of ordinary skill in the art it would have been obvious to modify Sporre and Khan, such that the received signal burst includes a synchronisation channel burst from the target base station including the identity, so that the mobile station may be tuned to the specific channel frequency to measure the link quality.

2. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sporre (U.S. Patent 5966657) and Khan (U.S. Patent 6754509 B1) in view of Silventoinen et al (U.S. Patent 6594250 B1).

Regarding Claim 10, Sporre and Khan teach all the limitations as recited in claims 1, however the combination **is silent on** the received signal burst includes a dummy burst including an identity of the target base station.

Silventoinen teaches a signal burst includes a dummy burst including an identity of the target base station (Col.6;28-34).

To one of ordinary skill in the art it would have been obvious to modify Sporre and Khan, such that the received signal burst includes a dummy burst including an identity of the target base station, to provide continuous data transmission since all time slots in a frame are used for transmission throughout the subsequent frames in such a way the mobile stations don't confuse the burst addressed to them with another type of burst.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sporre (U.S. Patent 5966657) and Khan (U.S. Patent 6754509 B1) in view of Delprat et al (U.S. Patent 5583870).

Regarding Claim 11, Sporre and Khan teach all the limitation as recited in claim 7, and Sporre teaches a training sequence (Col.11;43-49, i.e. time slot 0), however the combination **is silent on** the burst from the target base station is a dummy burst including the training sequence being related to the identity of the target base station.

Delprat teaches that dummy bursts include a training sequence which can be recognized by the mobile stations (Col.3;35-39).

To one of ordinary skill in the art it would have been obvious to modify Sporre and Khan, such that the received signal burst includes a dummy burst including a training sequence being related to the identity of the target base station, to provide continuous data transmission since all time slots in a frame are used for transmission throughout the subsequent frames in such a way the mobile stations don't confuse the burst addressed to them with another type of burst.

4. Claims 13 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sporre (U.S. Patent 5966657) and Khan (U.S. Patent 6754509 B1) in view of Kansakoski et al (U.S. Patent 5214687).

Regarding Claims 13 and 27, Sporre and Khan teach all the limitations as recited in claims 12 and 26, however the combination **is silent on** determining the channel estimates for a set of pre-determined training sequences, calculating a selection metric, and selecting the training sequence that yields the greatest selection metric.

Sporre teaches measuring control channel frequencies to determine the best possible control channel frequencies for possible hand-off in the event its current signal burst deteriorates (Col.9;59-Col.6;2). To one of ordinary skill in the art it is obvious that a desired selection metric (i.e. signal burst strength) level is determined and the control channel frequencies (i.e. training sequence) with the best selection metric are used to select the training sequence (i.e. control channel frequency) that yields the greatest selection metric.

Kansakoski teaches determining the channel estimates for a set of pre-determined training sequences (Col.1;61-63).

To one of ordinary skill in the art it would have been obvious at the time of the invention to modify Sporre and Khan, such that channel estimates are determined for a set of predetermined training sequences in order to select the training sequence with the best selection metric, to provide a method of determining the best possible control channel frequencies for a possible handoff when current signal burst quality deteriorates.

5. Claims 9 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sporre (U.S. Patent 5966657) and Khan (U.S. Patent 6754509 B1) in view of Nikula et al (U.S. Patent 6690751 B1).

Regarding Claim 9 and 25, Sporre and Khan teach all the limitations as recited in claims 1 and 19, however the combination **is silent on** attempting to detect the received signal burst using at least two, different modulation forms.

Mind Commerce teaches EDGE systems (for GSM) recognizes two modulation methods (Col.1;25-28).

To one of ordinary skill in the art it would have been obvious to modify Sporre and Khan, such that the identifying step includes attempting to detect the received signal burst using at least two different modulation forms, to provide a method of enhancing throughput of digital radio transmission systems by allowing different modulation methods according to the signal burst propagation conditions and/or the nature of the information to be transmitted.

6. Claims 16-17, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sporre (U.S. Patent 5966657) and Khan (v) in view of Narasimha et al (U.S. Patent 6125125).

Regarding Claim 16 and 29, Sporre and Khan teach all the limitations as recited in claims 12 and 26, however the combination **is silent on** wherein the received signal burst includes contributions from a plurality of unsynchronised target base stations transmitting on the same frequency channel, wherein the steps of measuring and identifying are performed with respect to one target base station at a time sequentially for at least two of the target base stations.

Narashima teaches that various BTS's operating on the same frequency are not synchronized (Col.3;24-27), and a training sequences from two BTS's are detected at a mobile station sequentially (Col.3;30-32).

To one of ordinary skill in the art it would have been obvious to modify Sporre and Khan with Narasimha since Sporre and Narasimha are from similar

search areas, viz. transmission of data from a BTS to a mobile station in TDMA cell sites, in order to efficiently handle multiple base stations operating on the same frequency channel.

Regarding Claims 17 and 30, Sporre and Khan teach all the limitations as recited in claims 12 and 26, however the combination **is silent on** wherein the received signal burst includes contributions from a plurality of synchronised target base stations transmitting on the same frequency channel, wherein the steps of measuring and identifying are performed with respect to the target base stations for at least two of the synchronised target base stations jointly in one operation.

Narashima teaches that various BTS's operating on the same frequency are not synchronized (Col.3;24-27), and a training sequences from two BTS's are detected at a mobile station not simultaneously but sequentially (Col.3;30-32) due to the BTS's not being in synchronization. One of ordinary skill in the art would envision, from Narashima's teaching, that if the base stations were synchronized on the same frequency channel, then the training sequences would be detected jointly in one operation.

To one of ordinary skill in the art it would have been obvious to modify Sporre and Khan with Narasimha since Sporre and Narasimha are from similar search areas, viz. transmission of data from a BTS to a mobile station in TDMA cell sites, in order to efficiently handle multiple base stations operating on the same frequency channel.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley L. Kim whose telephone number is 571-272-7867. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WLK

GEORGE ENG
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